

CENTRAL MACHINERY®

GASOLINE AUGER DRILL

Model 67414

SET UP, OPERATING, AND SERVICING INSTRUCTIONS



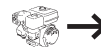
⚠ DANGER

Using an engine indoors **CAN KILL YOU IN MINUTES.**

Engine exhaust contains carbon monoxide.
This is a poison you cannot see or smell.



NEVER use inside
a home or garage,
EVEN IF doors and
windows are open.



Only use **OUTSIDE**
and far away from
windows, doors, and
vents.

Distributed exclusively by Harbor Freight Tools®.

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Visit our website at: <http://www.harborfreight.com>



**Read this material before using this product.
Failure to do so can result in serious injury.
SAVE THIS MANUAL.**

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For technical questions or replacement parts, please call 1-800-444-3353.

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SAVE THIS MANUAL

Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

IMPORTANT SAFETY INFORMATION

In this manual, on the labeling, and all other information provided with this product:



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if

not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

CAUTION

CAUTION, without the safety alert symbol, is used to address practices not related to personal injury.



WARNING! Read all instructions. Failure to follow all instructions listed below may result in fire, serious injury and/or DEATH.

The warnings and precautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

SAVE THESE INSTRUCTIONS

SET UP PRECAUTIONS

1. Gasoline fuel and fumes are flammable, and potentially explosive. Use proper fuel storage and handling procedures. Do not store fuel or other flammable materials nearby.
2. Have multiple ABC class fire extinguishers nearby.
3. Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrestor may be required. The operator should contact local fire agencies for laws or

- regulations relating to fire prevention requirements.
4. Wear ANSI-approved safety goggles, heavy-duty work gloves, and dust mask/respirator during set up.
 5. Use only oil and fuel recommended in the "Specifications" section of this manual.
 4. To prevent severe personal injury or dismemberment from rotating bit: Stand on flat, level, solid surface and brace against torque during use. Keep hands and feet away from auger bit and hole when engine is running.
 5. Disconnect and insulate spark plug wire before maintenance and/or changing bits.

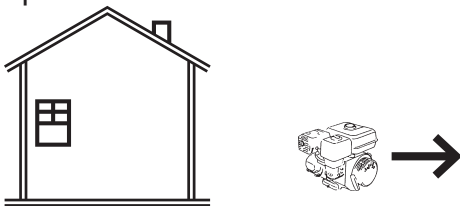
OPERATING PRECAUTIONS

1.  **CARBON MONOXIDE HAZARD**
Using an engine indoors CAN KILL YOU IN MINUTES.

Engine exhaust contains carbon monoxide. This is a poison you cannot see or smell.



NEVER use inside a home or garage, EVEN IF doors and windows are open.



Only use OUTSIDE and far away from windows, doors, and vents.

2. Do not lock trigger on. Always use with both hands on handles.
3. Buried utility lines may be unmarked; contact utility companies before drilling. Striking utility lines may cause severe personal injury or death.
13. Do not leave the equipment unattended when it is running. Turn
6. Never disable safety switches or components.
7. Do not carry between holes with engine running.
8. Carry by handle only; not by bit.
9. Gasoline fumes are explosive. Never smoke or refill with engine running.
10. Keep bystanders away during use.
11. Keep children away from the equipment, especially while it is operating.
12. **IMPORTANT! Your Warranty is voided if:**
 - a. **You do not operate the Auger Drill with the proper 25:1 fuel mix in its fuel tank.** Do not run the Engine with an improper fuel mix, low or no fuel mix. Running the Engine with an improper fuel mix, low or no fuel mix, will permanently damage the unit.
 - b. **You do not operate the Auger Drill with the proper amount of SAE 80-90 gear oil in its Gearbox.** Do not run the Auger Drill with low or no gear oil. Running the Auger Drill with low or no gear oil will permanently damage the unit.

off the equipment (and remove safety keys, if available) before leaving the work area.

14. Wear ANSI-approved safety goggles, heavy duty work gloves, and steel-toed heavy-duty work boots during setup and use.
15. **Maintain a firm grip on the Auger Drill with both hands and be aware of the strong start-up torque of the tool.**
16. **Keep your thumb near the Kill Switch in the event the Auger Drill must be turned off immediately.**
17. **Do not use the Auger Drill if the Auger is dull, bent, or damaged.**
18. **Drill with the Engine running at full speed.** Fully squeeze the Speed Control Lever to maintain a steady drilling speed.
19. **Keep the Auger clean and undamaged.**
20. **Keep all guards and safety devices in proper working order and properly adjusted.**
21. **Before starting the Engine, make sure the Auger is not contacting any object.**
22. **When shutting off the Engine, make sure the Auger has stopped before setting the tool down.**
23. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to a heart pacemaker could cause pacemaker interference or pacemaker failure. Caution is necessary when near the engine's magneto or recoil starter. Engine should be off during distributor adjustment.
24. Use only accessories that are recommended by Harbor Freight Tools for your model. Accessories that may be suitable for one piece of equipment may become hazardous when used on another piece of equipment.
25. Do not operate in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Gasoline-powered engines may ignite the dust or fumes.
26. Stay alert, watch what you are doing and use common sense when operating this piece of equipment. Do not use this piece of equipment while tired or under the influence of drugs, alcohol or medication.
27. Do not overreach. Keep proper footing and balance at all times. This enables better control of the equipment in unexpected situations.
28. Dress properly. Do not wear loose clothing or jewelry. Keep hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.
29. Parts, especially exhaust system components, get very hot during use. Stay clear of hot parts.
30. Do not cover the engine or equipment during operation.
31. Keep the equipment, engine, and surrounding area clean at all times.
32. Use the equipment, accessories, etc., in accordance with these instructions

and in the manner intended for the particular type of equipment, taking into account the working conditions and the work to be performed. Use of the equipment for operations different from those intended could result in a hazardous situation.

33. Do not operate the equipment with known leaks in the engine's fuel system.
34. This product contains or, when used, produces a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. (California Health & Safety Code § 25249.5, *et seq.*)
35. When spills of fuel or oil occur, they must be cleaned up immediately. Dispose of fluids and cleaning materials as per any local, state, or federal codes and regulations. Store oil rags in a bottom-ventilated, covered, metal container.
36. Before use, check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the equipment's operation. **If damaged, have the equipment serviced before using.** Many accidents are caused by poorly maintained equipment.
37. Use the correct equipment for the application. Do not modify the equipment and do not use the equipment for a purpose for which it is not intended.

Vibration Hazard:

This tool vibrates during use. Repeated or long-term exposure to vibration may cause temporary or

permanent physical injury, particularly to the hands, arms and shoulders. To reduce the risk of vibration-related injury:

1. Anyone using vibrating tools regularly or for an extended period should first be examined by a doctor and then have regular medical check-ups to ensure medical problems are not being caused or worsened from use. Pregnant women or people who have impaired blood circulation to the hand, past hand injuries, nervous system disorders, diabetes, or Raynaud's Disease should not use this tool. If you feel any symptoms related to vibration (such as tingling, numbness, and white or blue fingers), seek medical advice as soon as possible.
2. Do not smoke during use. Nicotine reduces the blood supply to the hands and fingers, increasing the risk of vibration-related injury.
3. Wear suitable gloves to reduce the vibration effects on the user.
4. Use tools with the lowest vibration when there is a choice between different processes.
5. Include vibration-free periods each day of work.
6. Grip tool as lightly as possible (while still keeping safe control of it). Let the tool do the work.
7. To reduce vibration, maintain the tool as explained in this manual. If any abnormal vibration occurs, stop use immediately.

SERVICE PRECAUTIONS

1. **Before service, maintenance, or cleaning:**
 - a. **Turn the engine switch to its “OFF” position.**
 - b. **Allow the engine to completely cool.**
 - c. **Then, remove the spark plug wire(s) from the spark plug(s).**
2. Keep all safety guards in place and in proper working order. Safety guards include muffler, air cleaner, mechanical guards, and heat shields, among other guards.
3. **Do not alter or adjust any part of the equipment or its engine that is sealed by the manufacturer or distributor. Only a qualified service technician may adjust parts that may increase or decrease governed engine speed.**
4. Wear ANSI-approved safety goggles, heavy-duty work gloves, and dust mask/respirator during service.
5. Maintain labels and nameplates on the equipment. These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
6. Have the equipment serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the equipment is maintained. Do not attempt any service or maintenance procedures not explained in this manual or any procedures that you are uncertain about your ability to perform safely or correctly.
7. Store equipment out of the reach of children.
8. Follow scheduled engine and equipment maintenance.
9. Refueling Precautions:
 - a. Do not smoke, or allow sparks, flames, or other sources of ignition around the equipment, especially when refuelling.
 - b. Do not refill the fuel tank while the engine is running or hot.
 - c. Do not fill fuel tank to the top. Leave a little room for the fuel to expand as needed.
 - d. Refuel in a well-ventilated area only.



**SAVE THESE
INSTRUCTIONS.**

BASIC SPECIFICATIONS

Engine Rating		1.5 Horsepower
Fuel	Type	25:1 - 89+ octane unleaded gasoline to 2 cycle oil mix
	Capacity	.26 Gallons
Recommended Gear Oil		SAE 80 - 90 Weight Gear Oil
Maximum Drilling Depth		1' 10"
Auger Diameter		4"
Overall Bit Length		30" Long
Drive Shaft		7/8" Diameter x 1-1/2" Long
Accessories		Auger Bit, Spark Plug Wrench, Flat-Head Screwdriver, Hex Keys

Note: Additional specifications found in the TECHNICAL SPECIFICATIONS chart in this manual.

The emission control system for this engine is warranted for standards set by the U.S. Environmental Protection Agency. For warranty information, refer to the last pages of this manual.

At high altitudes, the engine's carburetor, governor (if so equipped), and any other parts that control the fuel-air ratio will need to be adjusted by a qualified mechanic to allow efficient high-altitude use and to prevent damage to the engine and any other devices used with this product.

UNPACKING

When unpacking, make sure that the item is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at 1-800-444-3353 as soon as possible.

COMPONENTS AND CONTROLS

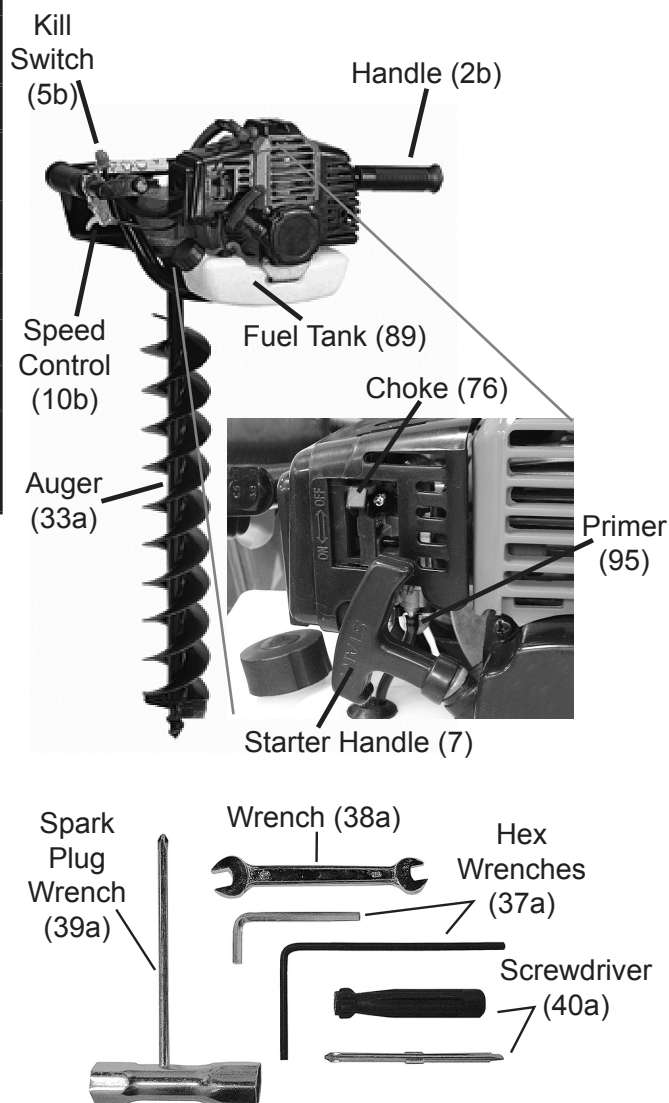


Figure 1

ASSEMBLY



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

⚠ WARNING

TO PREVENT SERIOUS INJURY

FROM ACCIDENTAL STARTING:

Turn off the engine, wait for the engine to cool, and disconnect the spark plug wire(s) before assembling or making any adjustments to the equipment.

⚠ WARNING

TO PREVENT SERIOUS INJURY:

Operate only with proper spark arrestor installed.

Operation of this equipment may create sparks that can start fires around dry vegetation.

A spark arrestor may be required.

The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

Note: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

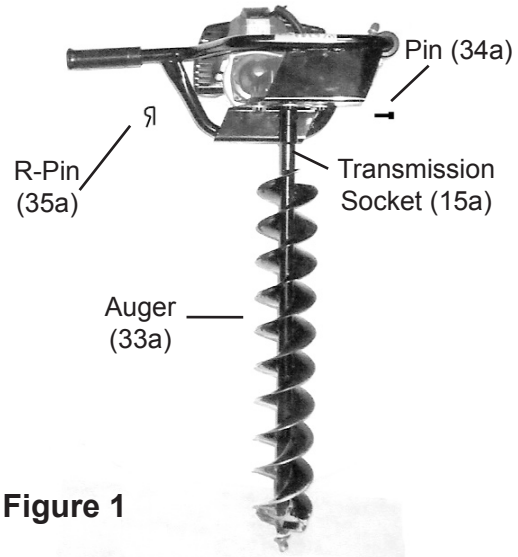


Figure 1

1. Insert the shank of the Auger (33a) fully upward into the Transmission Socket (15a).
2. Secure the Auger in the Transmission Socket, using the Pin (34a) and R-Pin (35a).

FUEL & OIL INSTRUCTIONS



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product.



Inspect engine and equipment looking for damaged, loose, and missing parts before set up and starting. If any problems are found, do not use equipment until fixed properly.

Checking and Filling Fuel



⚠ WARNING! TO PREVENT SERIOUS INJURY FROM FIRE:

Fill the fuel tank in a well-ventilated area away from ignition sources. Do not smoke. Do not attempt to fill the Fuel Tank (89) when the Engine is running or is hot to the touch.

IMPORTANT! Your warranty is voided if you do not operate the Auger Drill with the proper 25:1 fuel mix in its Fuel Tank (89). Do not run the Engine with an improper fuel mix, low or no fuel mix. Running the Engine with an improper fuel mix, low or no fuel mix will permanently damage the unit.

Check the fuel level before every use. If needed, add the proper fuel mixture as follows:

1. To obtain the proper 25:1 fuel mix, combine 25 parts unleaded gasoline (89+ octane) with 1 part 2-cycle oil in the provided Fuel Mix Container (36a). Cover and gently agitate to

thoroughly mix before each fueling. Refer to the chart below for proper mix quantities.

FUEL MIX QUANTITIES		
Ratio	2 Stroke Engine Oil	Unleaded Gasoline (89+ Octane)
25:1	5.1 Fl. Oz.	1 Gal.
25:1	10.2 Fl. Oz.	2 Gal.

NOTE: Mix only enough fuel for a few days work. The maximum storage time of mixed fuel is *three* months.

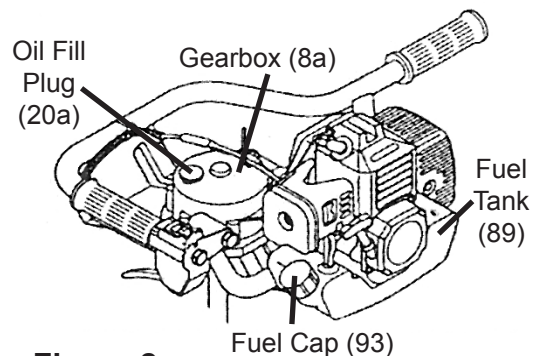


Figure 2

2. Once the proper fuel mixture is obtained, remove the Fuel Cap (93).
3. Fill the Fuel Tank (89) approximately 3/4 full with the fuel mixture.
4. Replace the Fuel Cap.

Fill the Gearbox

IMPORTANT! Your warranty is voided if you do not operate the Auger Drill with the proper amount of SAE 80-90 gear oil in its Gearbox (8a). Do not run the Auger Drill with low or no gear oil. Running the unit with low or no gear oil will permanently damage the unit.

1. Remove the Oil Fill Plug (20a).
2. Wipe top of Gear Box with a clean cloth.

3. Carefully fill (approximately 8-1/2 ounces) the Gearbox (8a).
4. Wipe up any spilled oil.
5. Replace the Oil Fill Plug and tighten securely.

NOTE: Do not use dirty, used, or otherwise contaminated gear oil. Damage may occur to the internal mechanisms of the Gearbox (8a).

CAUTION! Do not run the engine with too little or too much oil. The engine will be permanently damaged.

OPERATING INSTRUCTIONS



Before starting the engine:

- a. Follow the Set Up Instructions to prepare the equipment.
 - b. Inspect the equipment and engine.
 - c. Fill the engine with the proper amount and type of fuel mixture and gearbox oil.
 - d. Read the section that follows.
1. Place the Auger Drill on its side with its Auger (33a) resting upon the ground surface location that is to be drilled.
 2. **Make sure that no debris, clothing, or other objects are near the auger bit. Keep all bystanders away.**

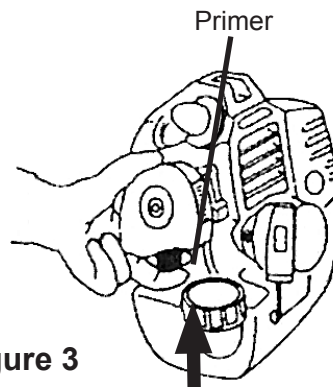


Figure 3

3. Depress the Primer (95) three to four times.

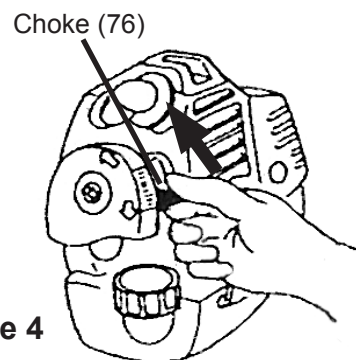


Figure 4

4. Set the Choke (76) to the appropriate position:
Closed (Up) if the Engine is cold.
Open (Down) if the Engine is warm.

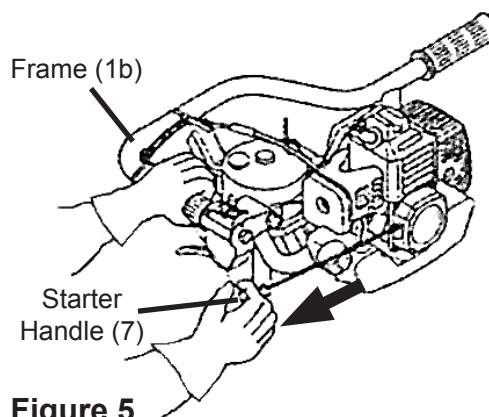


Figure 5

5. Grip the Frame (1b) firmly with your left hand. Keep all body parts well away from the bit. Then, with your right hand, pull rapidly on the Starter Handle (7) to start the Engine.

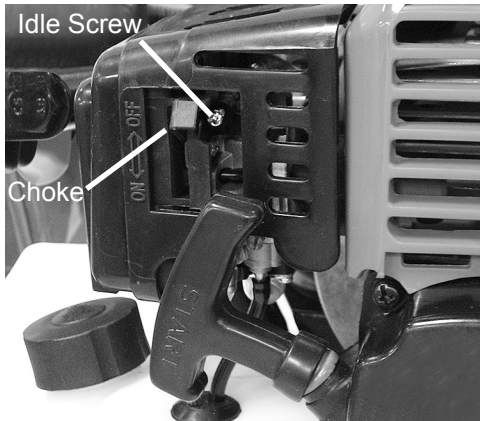


Figure 6

WARNING! The Auger (33a) should not turn at idle. If it is turning at idle, shut off the engine by releasing the Speed Control (10b) and pressing the Kill Switch (5b), disconnect the spark plug, then turn the Idle Screw of the Carburetor (shown above) *counterclockwise* to reduce the idle RPM, or immediately discontinue using the Auger Drill and contact a qualified service technician to make the adjustment.

6. Once the Engine is started, open the Choke (76).
7. If the Engine *does not* start, press the Primer (95) again. Close the Choke (76) if it is open, and again attempt to start the Engine.

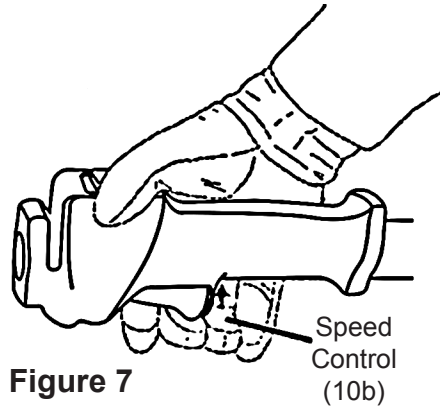


Figure 7

8. As soon as the Engine is running, check to make sure the Choke (76) is open. Squeeze the Speed Control (10b) briefly and let up. The Speed Control will revert to its original position, causing the Engine to idle. **Keep your thumb near the Kill Switch in the event the Auger Drill must be stopped immediately. (See Figure 8.)**

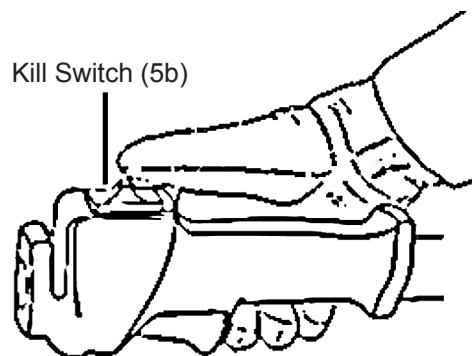


Figure 8

9. To stop the Auger Drill when needed, release pressure on the Speed Control (10b). Then, press down on the Kill Switch (5b).
10. Stand with a solid stance on stable ground. Brace yourself and maintain a proper grip with both hands on the Frame (1b) whenever the Engine is running.

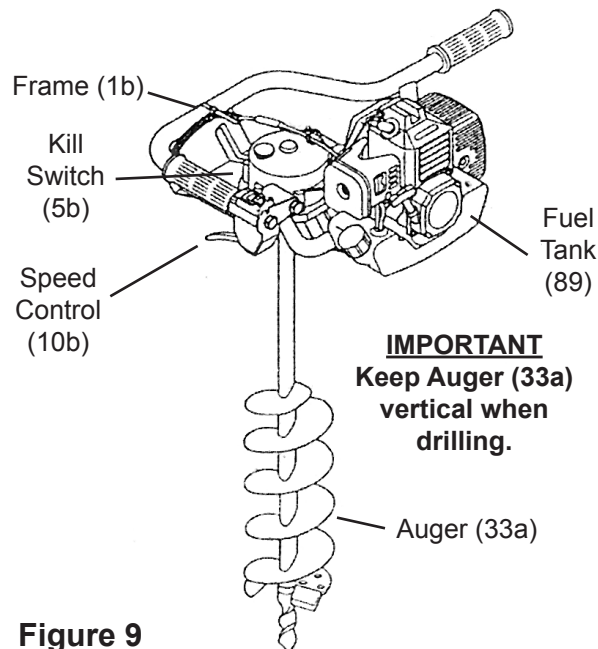


Figure 9

11. Accelerate the Engine to full throttle just before starting to drill by squeezing the Speed Control (10b). Also, keep the Engine at full throttle the entire time you are drilling, unless a problem arises.
12. **Do not attempt to drill at an angle.** Keep the Auger (33a) vertical at all times.
13. Allow the Auger (33a) to drill for you. Exert only light downward pressure. If you attempt to force the drill, damage to the Auger Drill and Auger (33a) can result. **Be aware of the strong twisting forces produced by the drill during operation.**
14. Release the Speed Control (10b) as soon as the drilling is completed, allowing the Engine to idle.

Note: Avoid running the Auger Drill at full throttle without a drilling load.

15. After running the Auger Drill for an extended period of time, allow the Engine to idle for several minutes to

dissipate the heat. This will prevent some Engine parts (ignition system, piston rings, carburetor, etc.) from being damaged by overheating. Then press the Kill Switch (5b) to turn off the Engine.

16. Before storing the Auger Drill, make sure to drain all fuel out of the tool's Fuel Tank (89). If this is not followed, old fuel in the Fuel Tank may clog the Carburetor and prevent the tool from starting until cleaned out. Then store the tool in a clean, dry, safe location out of reach of children and other unauthorized people.

TECHNICAL SPECIFICATIONS

Engine Type		1.5 Horsepower / 52cc Single Cylinder 2 stroke / Recoil Start
Bore x Stroke		44 x 34
Compression Ratio		8.2:1
Displacement		52cc
Rotation viewed from PTO (power takeoff - the output shaft)		Clockwise
Fuel	Type	25:1 - 89+ octane unleaded gasoline to 2 cycle oil mix
	Capacity	.26 Gallons
Recommended Gear Oil		SAE 80-90 Weight Gear Oil
Spark Plug	Compatible Types	NGK BPM7A Bosch WS7F Champion CJ7Y Torch L7T (resistive plugs only)
	Gap	0.028~0.031"
Drilling Speed		150 RPM

SERVICING



WARNING TO PREVENT SERIOUS INJURY FROM ACCIDENTAL STARTING:

Turn off the engine, wait for the engine to cool, and disconnect the spark plug wire(s) before performing any inspection, maintenance, or cleaning procedures.



WARNING TO PREVENT SERIOUS INJURY FROM EQUIPMENT FAILURE:

Do not use damaged equipment. If abnormal noise, vibration, or excess smoking occurs, have the problem corrected before further use.

Maintenance Procedures



Many maintenance procedures, including those not detailed in this manual, will need to be performed by a qualified technician for safety. If you have any doubts about your ability to safely service the equipment or engine, have a qualified technician service the equipment instead.

Note: Warranty is void if proper maintenance and servicing procedures are not followed.

Daily Maintenance

- Before each use:** Inspect the general condition of the Auger Drill. Check for misalignment or binding of moving parts, cracked or broken parts, dull or damaged Auger (33a), and any other condition that may affect the safe operation of the tool.
- An Auger (33a) that is bent or packed with dirt and debris can cause personal injury. Replace a damaged Auger and keep the Auger clean at all times.
- Check the Air Filter (78) prior to each use for excessive dirt and debris buildup, clean as needed.
- Check the gear oil level in the Gearbox (8a) prior to each use, and fill as needed with SAE 80-90 weight gear oil.
- After each use, use a clean cloth and mild detergent to clean the exterior of the engine. Do not use solvents. Remove the Auger (33a) from the engine and use a garden hose to

wash off any dirt. Do not introduce liquids into the interior of the engine.

Air Filter Element Maintenance

1. Wipe off the Air Filter Cover (79).
2. Remove the Head Cover Bolt (81), the Air Filter Cover, and the plastic plate holding the Air Filter in place. Note the placement of the plastic plate so the bolt hole in the center is in alignment for re-assembly.
3. Remove the air filter element.
4. Wipe Air Cleaner Case (73).
5. Wash the element in warm water and mild detergent several times. Rinse. Squeeze out excess water and allow it to dry completely. Soak the filter in lightweight oil briefly, then squeeze out the excess oil.
6. Install the new filter or the cleaned filter in reverse order of removal. Secure the Air Filter Cover before use.

Spark Plug Maintenance

1. Disconnect spark plug wire from end of plug. Clean out debris from around spark plug.
2. Using a spark plug wrench, remove the spark plug.
3. Inspect the spark plug:
If the electrode is oily, clean it using a clean, dry rag.
If the electrode has deposits on it, polish it using emery paper.
If the white insulator is cracked or chipped, the spark plug needs to be replaced.

4. When installing a new spark plug, adjust the plug's gap to the specification on the Technical specification chart. Do not pry against the electrode or the insulator, the spark plug can be damaged.
5. Install the new spark plug or the cleaned spark plug into the engine. Gasket-style: Finger-tighten until the gasket contacts the cylinder head, then about 1/2-2/3 turn more. Non-gasket-style: Finger-tighten until the plug contacts the head, then about 1/16 turn more.
6. Apply a small amount of dielectric grease (not included) to the insulator of the spark plug and attach the wire securely to the spark plug.

Fuel Filter Maintenance



⚠️WARNING! TO PREVENT SERIOUS INJURY FROM FIRE:

Replace or clean the Fuel Filter in a well-ventilated area away from ignition sources. Do not smoke.

1. Wear protective gear including, ANSI-approved safety goggles, NIOSH-approved dust mask/respirator, and nitrile gloves.
2. There is a Fuel Filter (84) hanging inside the Fuel Tank and a Filter in the Fuel Tank Cap Set (94).
3. To clean, remove them from the tank and flush them with clean gas over a container to remove any debris. Replace the cleaned filter or a new filter in the tank.
4. Clean up any spilled fuel.

5. Wait for at least one hour before use to allow all residual fuel vapors to dissipate. **To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.**

Cleaning, Maintenance, and Lubrication Schedule

Note: This maintenance schedule is intended solely as a general guide. If performance decreases or if equipment operates unusually, check systems immediately. The maintenance needs of each piece of equipment will differ depending on factors such as duty cycle, temperature, air quality, fuel quality, and other factors.

Note: These procedures are in addition to the regular checks and maintenance explained as part of the regular operation of the engine and equipment and Daily Maintenance procedures.

Every Month (in dirty environments):

- a. Check/clean air filter element.
- b. Check/clean Fuel Filter (84) and Fuel Cap w/Filter Set (94).

Every 3 Months or 50 Operation Hours:

- a. Clean/replace air filter element.
- b. Clean Fuel Filter (84) and Fuel Cap w/Filter Set (94).
- c. Replace gear oil in Gearbox.

Every 6 Months or 100 Operation Hours:

- a. Clean/replace air filter element.
- b. Clean/replace spark plug.

Every 300 Operation Hours:

- a. Clean fuel tank and carburetor.
- b. Clean carbon build-up from combustion chamber.

Every 3 years:

Replace Fuel Filter (84) and Fuel Cap w/Filter Set (94).

Storage

1. Wait for engine to cool, then clean engine with clean cloth.
2. When the equipment is to remain idle for longer than 20 days, prepare the engine for storage as follows:
 - a. Empty fuel tank.
 - b. Clean out area around spark plug. Remove spark plug and pour one tablespoon of engine oil into cylinder through spark plug hole.
 - c. Reinstall spark plug, but leave spark plug wire disconnected.
 - d. Gently pull the recoil starter to distribute oil in the cylinder. Stop after one or two revolutions when you feel the piston start the compression stroke (when you start to feel resistance).
3. Apply a thin coat of rust preventive oil to all uncoated metal parts.
4. Cover and store in a dry, well-ventilated area out of reach of children.

Troubleshooting

Engine will not start	FUEL RELATED: 1. Low or no fuel in fuel tank or improper fuel/2-cycle oil mixture. 2. Choke not in start position, especially with cold engine. 3. Low quality or deteriorated, old gasoline. 4. Carburetor not primed. 5. Dirty fuel passageways blocking fuel flow. 6. Carburetor needle stuck. Fuel can be smelled in the air. 7. Too much fuel in chamber. This can be caused by the carburetor needle sticking. 8. Blocked Fuel Cap Filter (94) or Fuel Filter (84).	FUEL RELATED: 1. Fill fuel tank with proper 25:1 unleaded gasoline/2-cycle oil mix. 2. Close the choke if engine is cold. Leave open if the engine is hot. 3. Use only fresh 25:1 ratio of 89+ octane unleaded gasoline with 2-cycle oil mixture. 4. Prime carburetor by pressing priming bulb specified number of times (if equipped). 5. Clean out passageways using fuel additive. Heavy deposits may require further cleaning. 6. Gently tap side of carburetor float chamber with screwdriver handle. 7. Open the choke. Remove spark plug and pull the start handle several times to air out the chamber. Reinstall spark plug and close the choke. 8. Clean/replace Filter (84 or 94) components.
	IGNITION (SPARK) RELATED: 1. Spark plug wire not connected securely. 2. Spark plug electrode wet or dirty. 3. Incorrect spark plug gap. 4. Spark plug wire or spark plug broken. 5. Incorrect spark timing or faulty ignition system.	IGNITION (SPARK) RELATED: 1. Connect spark plug wire properly. 2. Clean spark plug. 3. Reset spark plug gap. 4. Replace spark plug wire and/or spark plug. 5. Have qualified technician diagnose/repair ignition system.
	COMPRESSION RELATED: 1. Cylinder not lubricated. Problem after long storage periods. 2. Loose or broken spark plug. (Hissing noise will occur when trying to start.) 3. Loose cylinder head or damaged head gasket. (Hissing noise will occur when trying to start.)	COMPRESSION RELATED: 1. Pour tablespoon of oil into spark plug hole. Crank engine a few times and try to start again. 2. Tighten spark plug. If that does not work, replace spark plug. If problem persists, it may be a head gasket problem, see #3. 3. Tighten head. If that does not remedy problem, replace head gasket.



Follow all safety precautions whenever diagnosing or servicing the equipment or engine.

Problem	Possible Causes	Probable Solutions
Auger rotates while engine is idle	Engine idle Speed set too high.	Have a qualified service technician reset carburetor idle adjustment screw to lower idle (RPM) speed.
Gearbox feels exceptionally hot to the touch	Low level of gear oil.	Immediately turn off Auger Drill. Allow gearbox to completely cool. Then, fill gearbox with SAE 80-90 gear oil.
Kill switch does not turn off engine	Faulty kill switch.	Immediately remove spark plug cap from spark plug to stop engine. Discontinue using Auger Drill until the tool is repaired by a qualified service technician.
Engine runs, but auger is not rotating	1. Speed control not properly used. 2. Speed control cable not properly adjusted. 3. Auger stuck in rocks, roots, etc.	1. Make sure to fully squeeze the speed control. 2. Have a qualified service technician adjust speed control cable. 3. Remove auger from hole and clear hole of obstructions.
Engine misfires	1. Spark plug wire loose. 2. Incorrect spark plug gap or damaged spark plug. 3. Defective spark plug wire. 4. Old or low quality gasoline. 5. Incorrect compression.	1. Check wire connections. 2. Re-gap or replace spark plug. 3. Replace spark plug wire. 4. Use only fresh 25:1 ratio of 89+ octane unleaded gasoline and 2-cycle oil mixture. 5. Diagnose and repair compression. (Use Engine will not start: COMPRESSION RELATED section, page 17.)
Engine stops suddenly	1. Fuel tank empty or full of impure, low quality or improper mix of gasoline to oil ratio. 2. Defective fuel tank cap creating vacuum, preventing proper fuel flow. 3. Improper idle speed. 4. Incorrect timing, or clogged carburetor.	1. Fill fuel tank with fresh 25:1 ratio of 89+ octane unleaded gasoline and 2-cycle oil mixture. 2. Test/replace fuel tank cap. 3. Properly adjust idle speed. 4. Have qualified technician diagnose and service engine.
Engine knocks	1. Old or low quality gasoline. 2. Engine overloaded. 3. Incorrect spark timing, deposit buildup, worn engine, or other mechanical problems.	1. Fill fuel tank with fresh 25:1 ratio of 89+ octane unleaded gasoline and 2-cycle oil mixture. 2. Do not exceed equipment's load rating. 3. Have qualified technician diagnose and service engine.



Follow all safety precautions whenever diagnosing or servicing the equipment or engine.

Problem	Possible Causes	Probable Solutions
Engine backfires	1. Impure or low quality gasoline. 2. Engine too cold. 3. Choke not open after engine warm. 4. Engine not properly adjusted for high altitude operation. 5. Intake valve stuck, choke stuck, incorrect timing, clogged carburetor, or overheated engine.	1. Fill fuel tank with fresh 25:1 ratio of 89+ octane unleaded gasoline and 2-cycle oil mixture. 2. Use cold weather fuel and oil additives to prevent backfiring. 3. Open choke after engine warms up. 4. Qualified technician must adjust engine at altitudes greater than 5,000 feet above sea level. 5. Have qualified technician diagnose and service engine.



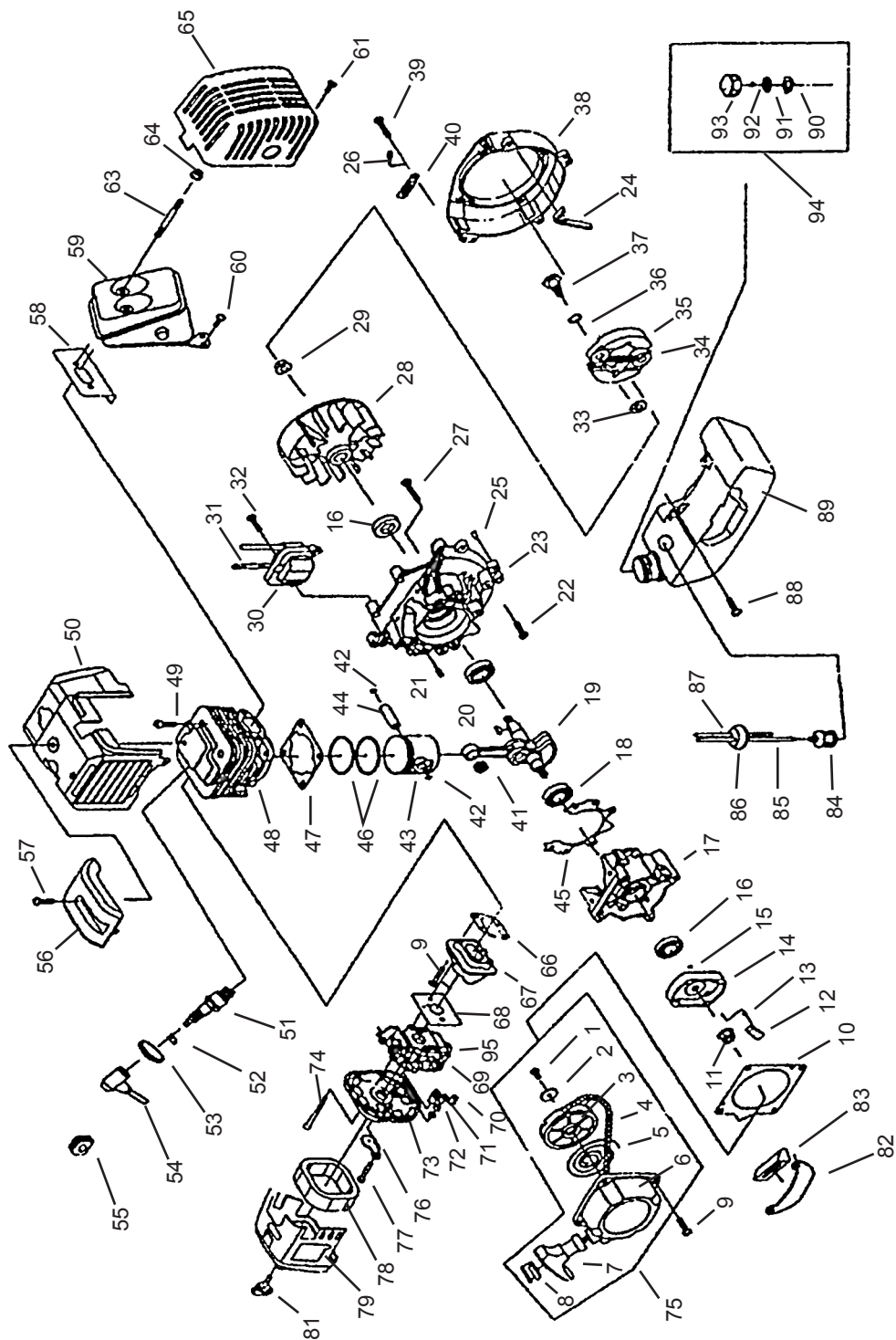
Follow all safety precautions whenever diagnosing or servicing the equipment or engine.

ENGINE PARTS LIST

Part	Description	Qty
1	Set Screw (M5 x 12)	1
2	Gasket	1
3	Reel	1
4	Starter Rope	1
5	Spiral Spring	1
6	Rewind Starter Assy.	1
7	Starter Handle	1
8	Handle Clip	1
9	Screw (M5 x 20)	6
10	Crankcase Gasket	1
11	Nut (M8)	1
12	Startup Claw	1
13	Startup Reed	1
14	Cover	1
15	Outer Snap Ring (4)	1
16	Small Oil Seal	2
17	Crankcase Cover	1
18	Ball Bearing (6201/P5)	2
19	Crankshaft (Complete)	1
20	Woodruff Key (3 x 5 x 13)	1
21	Set Pin (B4 x 10)	2
22	Screw (M5 x 12)	2
23	Crankcase	1
24	Flow Guard	1
25	Set Pin (B4 x 10)	2
26	Support	1
27	Screw (M5 x 30)	4
28	Rotor	1
29	Nut (M8)	1
30	Stator	1
31	Flameout Line	1
32	Screw	1
33	Washer (B)	2
34	Return Spring	1
35	Flexible Piece	2
36	Washer	2
37	Screw	2
38	Fan	1
39	Screw (M5 x 21)	4
40	Wire Clip	1
41	Piston Pin	1
42	Piston Pin Circlip	2
43	Piston	1
44	Piston Pin	1
45	Crankcase Gasket	1
46	Piston Ring	2
47	Cylinder Gasket	1

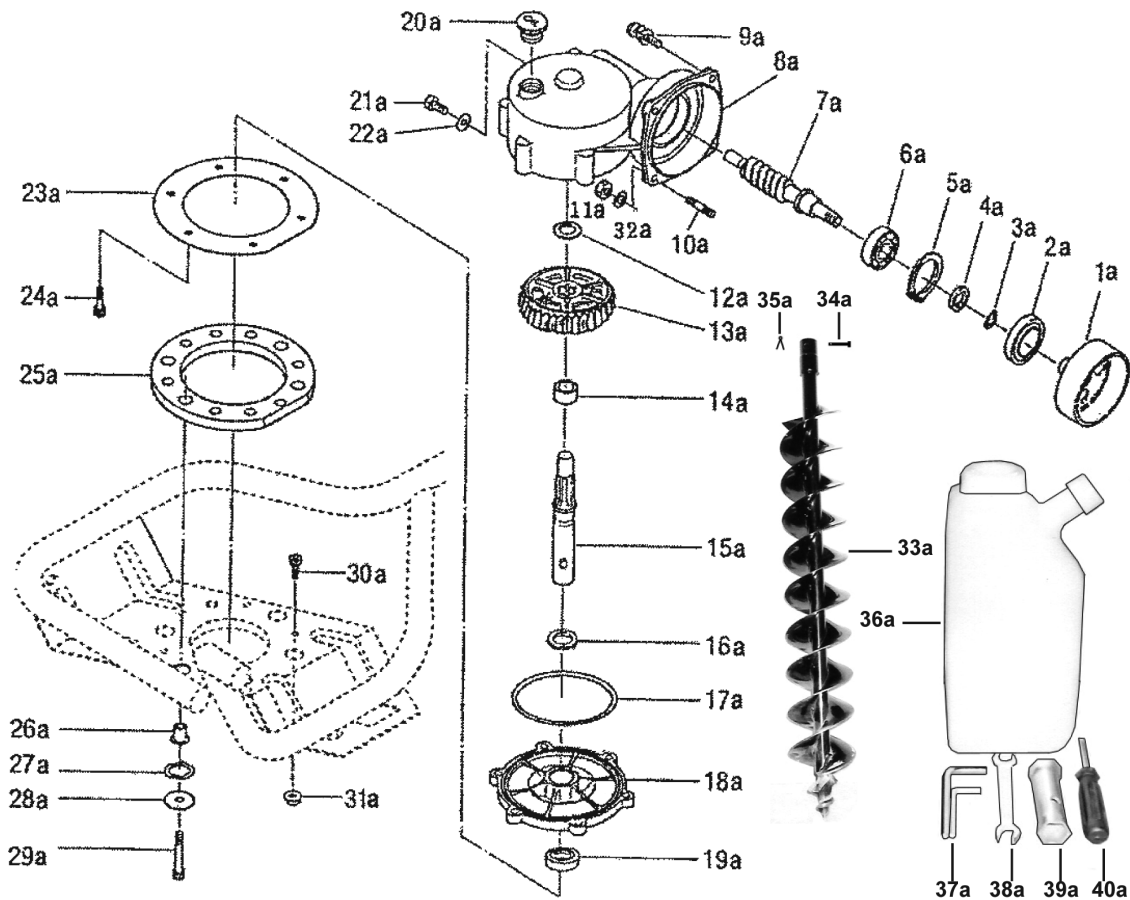
Part	Description	Qty
48	Cylinder	1
49	Bolt (M5 x 18)	4
50	Cylinder Cover	1
51	Spark Plug	1
52	Spark Plug Clip Reed	1
53	Spark Plug Cover	1
54	Spark Plug Cap	1
55	Cap Cover	1
56	Top Cover	1
57	Screw (M5 x 20)	1
58	Muffler Insulator	1
59	Muffler	1
60	Socket Head Bolt (M5 x 12)	1
61	Socket Head Bolt (M5 x 12)	1
63	Stud	2
64	Nut (M6)	2
65	Muffler Protection Cover	1
66	Intake Port Gasket	2
67	Intake Port	1
68	Carburetor Gasket	1
69	Carburetor Assy.	1
70	Choke Switch	1
71	Washer	1
72	Nut (M4)	1
73	Air Cleaner Case	1
74	Bolt (M5 x 50)	2
75	Recoil Starter	1
76	Choke	1
77	Self Tapping Bolt (ST4.2 x 12)	1
78	Air Filter	1
79	Air Filter Cover	1
81	Head Cover Bolt	1
82	Gasoline Tank Strut	1
83	Latex Cover	1
84	Fuel Filter	1
85	Fuel Line	1
86	Fuel Line Plug	1
87	Fuel Line	1
88	Bolt (M5 x 20)	2
89	Fuel Tank	1
90	Packing Ring	1
91	Intake Strut	1
92	Intake	1
93	Fuel Cap	1
94	Fuel Tank Cap w/Filter Set	1
95	Primer	1

ENGINE ASSEMBLY DIAGRAM



AUGER PARTS LIST & ASSEMBLY DIAGRAM

Part	Description	Qty	Part	Description	Qty
1a	Starting Flange	1	21a	Bolt (M6 x 12)	1
2a	Oil Seal (20 x 52 x 7)	1	22a	Washer	1
3a	Washer	1	23a	Paper Underlay	1
4a	Washer	1	24a	Screw (M6 x 16)	6
5a	Fender Ring (47)	1	25a	Cushion Frame	1
6a	Bearing (6204)	1	26a	Liner Tube	5
7a	Worm Gear	1	27a	Washer	10
8a	Gearbox	1	28a	Washer (6)	1
9a	Hex Head Screw (M6 x 25)	4	29a	Hex Head Screw (M6 x 30)	5
10a	Stud (M6)	4	30a	Screw	4
11a	Nut (M6)	4	31a	Nut	4
12a	Washer	1	32a	Washer	4
13a	Gear	1	33a	Auger	1
14a	Lining	1	34a	Pin	1
15a	Transmission Socket	1	35a	R-Pin	1
16a	Washer	1	36a	Fuel Mix Container	1
17a	Gasket	1	37a	Hex Wrenches	2
18a	Gearbox Cover	1	38a	Open End Wrench	1
19a	Oil Seal (20 x 35 x 7)	1	39a	Spark Plug Socket	1
20a	Oil Fill Plug	1	40a	Screwdriver	1

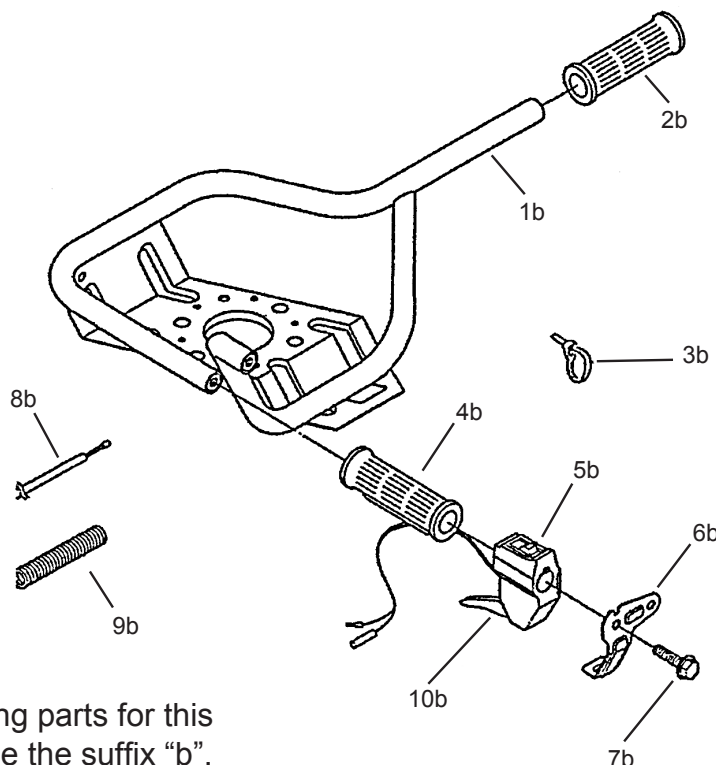


Note: When ordering parts for this component use the suffix "a".

FRAME PARTS LIST & ASSEMBLY DIAGRAM

Part	Description	Qty
1b	Frame	1
2b	Handle	1
3b	Tie Strip	3
4b	Handle	1
5b	Kill Switch	1

Part	Description	Qty
6b	Kill Switch Bracket	1
7b	Screw M12 x 20	2
8b	Accelerator Cable	1
9b	Bushing	1
10b	Speed Control	1



Note: When ordering parts for this component use the suffix “b”.

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

Record Product's Serial Number Here: _____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

EMISSION CONTROL SYSTEM WARRANTY

United States Emission Control Defects Warranty Statement

The United States Environmental Protection Agency (herein EPA) and Harbor Freight Tools (herein HFT) are pleased to explain the emission control system warranty on your 1997 and later Small Off-Road Engine (herein engine). Within the United States, new off-road, spark-ignition engines certified for model year 1997 and later, must be designed, built and equipped to meet the stringent anti-smog standards set forth by the EPA. HFT must warrant the emission control system on your engine for the periods of time described below, provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the carburetor or fuel-injection system, and the ignition system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, HFT will repair your engine at no cost to you including diagnosis, parts and labor.

Manufacturer's Warranty Coverage

The 1997 and later engines are warranted for two (2) years. If any emission-related part on your engine is defective, the part will be repaired or replaced by HFT.

Harbor Freight Tools Emission Control Defects Warranty Coverage

Engines are warranted for a period of two (2) years relative to emission control parts defects, subject to the provisions set forth below. If any emission related part on your engine is defective, the part will be repaired or replaced by HFT.

Owner's Warranty Responsibilities

- As the engine owner, you are responsible for the performance of the required maintenance listed in your Owner's Manual. HFT recommends that you retain all receipts covering maintenance on your engine, but HFT cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.
- As the engine owner, you should, however, be aware that HFT may deny you warranty coverage if your engine or a part has failed due to abuse, neglect, improper maintenance, or unapproved modifications.
- You are responsible for shipping your engine to a HFT warranty station as soon as a problem exists. Contact the HFT Customer Service department at the number below to make shipping arrangements. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact the Harbor Freight Tools Customer Service Department at 1-800-444-3353.

Harbor Freight Tools Emission Control Defects Warranty Provisions

1. Length of Coverage

HFT warrants to a first retail purchaser and each subsequent purchaser that the engine is free from defects in materials and workmanship that cause the failure of warranted parts for a period of two (2) years after the date of delivery to the first retail purchaser.

2. No Charge Repair or Replacement

Repair or replacement of any warranted part will be performed at no charge to the owner if the work is performed through a warranty station authorized by HFT. For emissions warranty service, contact the HFT Customer Service Department at 1-800-444-3353.

3. Consequential Damages Coverage

Coverage under this warranty shall also extend to the failure of any engine components caused by the failure of any warranted part while it is still covered under this warranty.

4. Coverage Exclusions

Warranty claims shall be filed in accordance with the provisions of the HFT warranty policy explained in the box at the top of the previous page. HFT shall not be liable for any loss of use of the engine, for any alternative usage, for any damage to goods, loss of time, or inconvenience. Warranty coverage shall also be excluded for any part which fails, malfunctions, or is damaged due to failure to follow the maintenance and operating instructions set forth in the Owner's Manual including, but not limited to:

- a) Use of parts which are not authorized by HFT
- b) Improper installation, adjustment or repair of the engine or of any warranted part unless performed by an authorized warranty center
- c) Failure to follow recommendations on fuel use contained in the Owner's Manual
- d) Improper or inadequate maintenance of any warranted parts
- e) Repairs performed outside of the authorized warranty service dealers
- f) Alterations by changing, adding to or removing parts from the engine.

5. Service and Maintenance

Component parts which are not scheduled for replacement as required maintenance or are scheduled only for regular inspection to the effect of "repair or replace as necessary" are warranted for the warranty period. Any warranted part which is scheduled for replacement as required maintenance is warranted for the period of time up to the first scheduled replacement point for that part. Any replacement part, provided it is equivalent in durability and performance, may be used in performance of maintenance or repairs. The owner is responsible for commissioning a qualified technician/mechanic to perform all required maintenance, as outlined in the Inspection, Cleaning, and Maintenance section in this manual.

6. Warranted Parts

1) Fuel Metering System

- i) Carburetor and its internal parts.
- ii) Fuel pump (if so equipped).
- iii) Cold start enrichment system.

2) Air Induction System

- i) Intake pipe/manifold.
- ii) Air cleaner.
- 3) Ignition System**
 - i) Spark plug.
 - ii) Magneto ignition system.
- 4) Catalyst System (if so equipped)**
 - i) Exhaust pipe stud.
 - ii) Muffler.
 - iii) Catalytic converter (if so equipped).
- 5) Miscellaneous Items Used in Above Systems**
 - i) Vacuum, temperature and time sensitive valves and switches.
 - ii) Hoses, belts, connectors, and assemblies.

LIMITED 1 YEAR / 90 DAY WARRANTY

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that for a period of ninety days from date of purchase that the engine/motor, the belts (if so equipped), and the blades (if so equipped) are free of defects in materials and workmanship. Harbor Freight Tools also warrants to the original purchaser, for a period of one year from date of purchase, that all other parts and components of the product are free from defects in materials and workmanship (90 days if used by a professional contractor or if used as rental equipment). This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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